

the guardian weekly

August 2012

Level » Advanced

Style » Individual or group activities



Welcome to the Guardian Weekly's special news-based materials to support learners and teachers of English. Each month, the Guardian Weekly newspaper selects topical news articles that can be used to practise English language skills. The materials are graded for two levels: Advanced and Lower Intermediate. These worksheets can be downloaded free from guardian.co.uk/weekly/. You can also find more advice for teachers and learners from the Guardian Weekly's Learning English section on the site.

Materials prepared by Janet Hardy-Gould

Rooftop fish farms set to feed Germany's city dwellers



Top feeder ... waste from tanks containing perch fertilises vegetables Alamy

Before reading

- 1 Work in pairs and discuss the questions.**
 - a** Do you or your family grow any food at home? eg vegetables or herbs
 - b** Is there anything that you would like to grow, keep or make at home? eg grow herbs, keep chickens, make butter
- 2 Look at the headline, photo and caption. Use words from the headline and caption to complete the paragraph.**

You may need to change the form of the words.

There is a new idea in

(a) which will help to provide food for (b) . The plan is to put (c) on the (d) of houses. The waste from the large water (e) will be used to (f) vegetables.

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- 3 Vocabulary from the article. Match the adjectives to the definitions.

- a controversial
- b disused
- c organic
- d self-contained
- e sustainable
- f urban

- 1 connected with a town or city
- 2 causing a lot of public discussion and disagreement
- 3 able to operate without outside help
- 4 abandoned; no longer in use
- 5 produced without artificial chemicals
- 6 able to continue without causing damage to the environment

Article

Rooftop fish farms set to feed Germany's city dwellers

- 1 Fish farms have proved controversial with anglers and environmentalists claiming their by-products are damaging the natural habitat.
- 2 But a project in Germany aims to feed growing urban populations by bringing aquaculture into town centres, putting tanks on rooftops and car parks and using the waste to grow vegetables.
- 3 The idea is simple. Perch swim in metal water tanks and the ammonia they excrete is used to fertilise tomatoes, salad leaves and herbs growing in a greenhouse mounted above. Aquaponic fish and vegetable farms aim to provide a self-contained system designed to provide city dwellers with organic, sustainable locally grown food.
- 4 "We have to think about systems which allow us to produce food in a very resource-efficient way," the co-founder of Efficient City Farming, Nicolas Leschke, said as he showed visitors around the small container farm prototype in the yard of a former malt factory in Berlin.
- 5 Alarmed by overfishing of the oceans and spiralling food miles, Leschke and his colleagues

are marketing their prototype as a basis for large aquaponic farm systems in German cities, with two in the planning stages.

- 6 Construction will begin next year on a 7,000 square-metre aquaponic farm on the roof of the disused factory in the German capital, which, when finished, will be the biggest in the world.
- 7 "The oceans are overfished and you don't have to be a prophet to know that's not going to change," Leschke said. "Also, with all the pesticides, antibiotics and genetic modifications, we just don't know what we're eating anymore."
- 8 Mounted on stilts, the Efficient City Farming containers can be set up almost anywhere, Leschke said, and farmers must only keep the water topped up and feed the fish. A small electric current is also needed to pump nitrate-enriched water from the fish tanks up to the hydroponic vegetable garden above.
- 9 With urban populations set to increase over the coming decades, there will be plenty of mouths to feed. Half of the global population are city dwellers, a figure the UN says will swell to almost 70% by 2050. But with the technology costing up to \$44,000 for a single container, only larger farms with bigger yields are economically viable.

Josie Le Blond

Glossary

by-product (noun) something extra that is produced during a process

perch (noun) a type of freshwater fish

angler (noun) a person who catches fish as a hobby

aquaculture (noun) the farming of aquatic animals or plants for food

stilts (plural noun) long posts that support a building above the ground

swell (verb) to increase in size

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While reading

1 Read article and answer the questions.

a Why have traditional fish farms been unpopular?

b What is the structure of the new type of fish farm?
Draw a sketch of how you think it might look.

c What overall type of food do the designers want to produce?

d What are Nicolas Leschke and his colleagues concerned about?

e Where will a huge aquaponic farm be built?

f Are the new rooftop fish tanks difficult to run? Why?/ Why not?

g Why is it important to begin producing food in urban areas?

2 Read the article again. Write the number of the paragraph next to the titles.

- a Largest urban fish farm on the planet
- b Urban populations expand rapidly
- c Problem of overfishing won't go away
- d Two farms in the pipeline
- e Easy concept provides sustainable food
- f Traditional fish farms - a danger to the environment
- g Space-efficient equipment that is simple to run
- h New project brings fish farms to cities
- i Prototype open to view

3 Note down the advantages and disadvantages of the new system mentioned. Add your ideas about other possible pros and cons.

Discuss with a partner whether you think the new plan is a good concept.

After reading

1 Vocabulary from the article - developing a new product. Fill the gaps with these words or phrases. market, set up, designed to, technology, viable, yields, prototype

A German company has developed a new system (a) _____ provide sustainable food for modern city dwellers. The organisation has created an initial (b) _____ of a new rooftop fish farm which it aims to (c) _____ to customers in urban areas.

The fish containers are convenient and can be (d) _____ nearly anywhere. However, there are questions over whether this new (e) _____ will be economically (f) _____. The high initial costs may mean that only bigger farms with larger (g) _____ will break even.

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2 What do these words and phrases from the text mean?

a ... systems which allow us to produce food in a resource-efficient way (paragraph 4)

b Alarmed by overfishing and spiralling food miles ... (paragraph 5)

c ... farmers must only keep the water topped up ... (paragraph 8)

d With urban populations set to increase over the coming decades ... (paragraph 9)

Activity - discussion

What type of things might be produced on city rooftops in the future? Work in groups and look at the items below.

vegetable gardens, bee hives, wind farms, solar panels, orchards, poultry farms

a Which ones can you find on city rooftops already?

b Which ones might you find in the future?

c Think of another rooftop item that you might find in the future. Share your ideas with the class

Answers

Before reading

- 2a** Germany **b** city dwellers **c** fish farms **d** rooftops **e** tanks **f** fertilise
3a 2 **b** 4 **c** 5 **d** 3 **e** 6 **f** 1

While reading

- 1a** Their by-products damage the environment.
b There's a metal tank underneath with a greenhouse on top. Ammonia from the fish is transferred up to the plants.
c Organic, sustainable, locally-grown food.
d Overfishing and rapidly rising food miles.
e On the roof of a disused factory in Berlin.
f No. They require little maintenance.
g The percentage of the global population living in cities will increase.

2a 6 **b** 9 **c** 7 **d** 5 **e** 3 **f** 1 **g** 8 **h** 2 **i** 4

After reading

- 1a** designed to **b** prototype **c** market **d** set up **e** technology **f** viable **g** yields
2a Using natural resources in an efficient and effective way.
b Taking too many fish out of the sea. Rapidly increasing.
c Regularly filled to the level you need.
d Likely to.